

What is claimed is:

1. An optical transmitter module, wherein:

part of outgoing light from a laser source is made
to pass through an etalon as a first ray bundle and is
5 guided to a first photo-detection means;

at least the other part of the outgoing light is
guided to a second photo-detection means as a second ray
bundle without passing through the etalon;

an oscillating frequency of the laser source is
10 maintained at a specific value, on the basis of a
differential signal between the first and second ray bundle
detected by the first and second photo-detection means;

the etalon is made up of two plate materials that
sandwich a media plate therebetween;

15 the two plate materials each have an optical
characteristic that transmits the first ray bundle;

one ends of the plate materials are each fixed to
the media plate, and the other ends extend from the fixed
portion to form a cantilever structure, or the center
20 portions thereof are fixed to the media plate, and the
other portions extend from the fixed portion to form a
cantilever structure, or two media plates are provided, in
which one ends of the plate materials are fixed to a first
media plate, and the other ends are fixed to a second media
25 plate, whereby the plate materials and the first and second

4. An optical transmitter module according to claim 1, wherein in the structure that the two plate materials

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incident light that falls on the plate material.

7. An optical transmitter module according to claim
1, wherein, of the plate materials constituting the etalon,
5 the plate material placed on the incident side of the first
ray bundle is a quarter wavelength plate.

8. An optical transmitter module according to claim
1, wherein the ray bundle passing through a part of the
10 etalon and the ray bundle not passing through the etalon
are to be obtained by splitting the incident light, and
~~By~~ one of the ray bundle is made to pass through the
etalon to be guided to a wavelength detecting photo-
detector as the first ray bundle, and the other is made not
15 to pass through the etalon to directly advance as a
reference light as the second ray bundle.

9. An optical transmitter module according to claim
1, wherein the outgoing light from the semiconductor laser
20 source are condensed, the etalon is tilted in the optical
path of the condensed light, the ray bundle having passed
through the etalon are split into two, one of the two-split
light is received by the first photo-detection means, the
other is received by the second photo-detection means, and
25 the difference of photocurrents of the two photo-detection

means serves as the wavelength error detection signal.

10. An optical transmitter module according to claim 1, wherein:

5 the laser source is mounted on a silicon substrate,
 the silicon substrate has a surface tilted to the
optical axis of the laser light, which reflects the laser
light, and

10 part of the laser light fall on the reflection
surface, which has such a slope that the reflected light
thereat is reflected in the direction of intersecting the
optical axis of the laser beams falling on the tilted
surface.

15 11. An optical transmitter module according to claim
10, wherein at least the laser source and the condensing
lens are mounted on the silicon substrate, part of the
laser light having passed through the condensing lens fall
on the tilted surface to be guided to the second photo-
20 detection means, and the laser light having not been
reflected by the tilted surface are guided to the etalon.

12. An optical transmitter module according to claim
10, wherein the tilted surface is formed by means of
25 anisotropic etching with respect to the crystallinity of

the silicon substrate.

13. An optical transmitter module according to claim 1, wherein the semiconductor laser source has a light emitting part capable of oscillating plural wavelengths, plural light beams emitted from the light emitting part are joined, part of the joined light beams are made to pass through the etalon to be guided to the first photo-detection means as the first ray bundle, at least the other part of the outgoing beams are guided to the second photo-detection means without passing through the etalon as the second ray bundle, and the oscillating frequency of the laser source is maintained at a specific value, on the basis of the differential signal between the first and second light beams detected by the first and second photo-detection means.

1. The first step is to identify the problem or goal. This involves understanding the current situation, identifying the key issues, and setting clear objectives. It is important to involve all relevant stakeholders in this process to ensure that everyone's perspective is considered.